

METHODS AND SYSTEMS FOR RELEASING INTRACELLULAR MATERIAL FROM CELLS WITHIN MICROFLUIDIC SAMPLES OF FLUIDS

ABSTRACT

The present invention relates to a microfluidic system for processing a cell-containing liquid. The system includes a lysing zone to receive the cell-containing sample and a positioning element to position the cell-containing sample in a lysing position in the vicinity of a lysing mechanism. The lysing mechanism releases intracellular material, such as DNA or RNA, from the cells. In one embodiment, the lysing mechanism includes electrodes for generating an electric field sufficient to release intracellular contents from the cells. Alternatively, the lysing mechanism may lyse the cells using chemical, heat and/or ultrasonic techniques or any combination of these techniques.